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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,033	03/16/2001	Yuichi Kamioka	28569.9200	5694

7590 08/06/2004

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EXAMINER	
PATEL, GAUTAM	

ART UNIT	PAPER NUMBER
2655	19

DATE MAILED: 08/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/811,033	KAMIOKA ET AL.	
	Examiner	Art Unit	
	Gautam R. Patel	2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17,20,21 and 23-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *20,21 and 23-25* is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-17, 20-21 and 23-25 are pending for the examination.

RCE STATUS

2. The request filed on 6-1-04 for Request for Continued Examination (RCE) under 37 CFR 1.114 based on parent Application is acceptable and a RCE has been established. An action on the RCE follows.

Claim Rejections - 35 U.S.C. § 103

3. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
>
> This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-8, and 10-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over AAPA, "Applicants Admitted Prior Art" (hereafter AAPA) in view of Taguchi, US. patent 6,011,768 (hereafter Taguchi), Yamada, US patent 4,967,417 (hereafter Yamada) and Ito et al., US. patent 5,090,001 (hereafter Ito).

As to claim 1, AAPA discloses the invention as claimed [see Figs. 13-22], including a reproduction current generation section, a high frequency current generation section, a recording current generation section, and current driving section comprising:

a reproduction current generation section [fig. 17, unit 518] for generating the reproduction current [page 7-8; specification]:

a high frequency current generation section [fig. 17, unit 519] for generating a high frequency current including a high frequency component for reducing semiconductor laser noise included in the reproduction [page 7-8; specification];

a recording current generation section [fig. 17, unit 518] for generating the recording current, the recording current including a pulse corresponding to the recording mark and the pulse including a plurality of multi-pulses [page 7-8; specification]; and

a current driving section [fig. 17, unit 511] for amplifying the reproduction current and the recording current, wherein the high frequency component included in the high frequency current generated by the high frequency current generation section is enhanced at the time of reproduction, and the high frequency component included in the recording current generated by the recording current generation section is enhanced at the time of recording [page 7-10; specification];

AAPA discloses all of the above elements, including a high frequency generator. AAPA does not specifically discloses a filter for attenuation of high frequency component [i.e. a low pass filter] and a switch that switches this filter OFF and ON; and details that are normally associated with this kind of filter.

However, low pass filters as well as high pass filters are well known in the art for a long time, and they are usually associated with noise and noise removal. Noise removal is necessary for smooth operation of the system because noisy environment may cause spikes in the electrical system, thus corrupting or destroying valuable data and/or signals. Also Taguchi clearly discloses:

a filter [fig. 3, unit 70] for operating so as to attenuate the enhanced high frequency component included in the high frequency current generated by the high frequency current generation section and the enhanced high frequency

component included in the recording current generated by the recording current generation section [col. 5, lines 1-40].

NOTE: component 70 inherently removes high frequency current, because it is an inductor in series with the current path.

Both AAPA and Taguchi discloses a laser control circuit and a high frequency generation and control circuits and all associated details.

One of ordinary skill in the art at the time of invention would have realized that the high frequency generation and management of high frequency signals are inherently associated with noise. Since noise is an unwanted component in the system some kind of noise reduction or removal system is inherently necessary and desirable. Therefore, it would have been obvious to have used a filter for attenuating high frequency component in the system of AAPA as taught by Taguchi because one would be motivated to reduce noise in the system of AAPA and provide better signal controls and improve quality of the signal by providing restriction to passage of high frequency noise components of currents.

Combination of AAPA & Taguchi discloses all of the above elements, including a high frequency generator and a filter to attenuate high frequency component. Combination does not specifically discloses well known switching section for switching the filter on or off as claimed.

However, switched filter are well known in the art. Also Yamada clearly discloses:

a switching section [fig. 6, unit 11] for switching the filter [LPF] on or off [col. 4, line 42-64; Yamada].

The combination of AAPA, and Taguchi discloses a laser control circuit and a high frequency generation, attenuation, control circuits and all associated details.

One of ordinary skill in the art at the time of invention would have realized that ringing and distortion of the waveforms are associated with high frequency current generation. And it would advantageous to remove these unwanted signals so as not damage the laser.

Therefore, it would have been obvious to have provided a switching section in the system of AAPA and Taguchi as taught by Yamada because one would be motivated to reduce noise of system and preventing damage to the laser [col. 4, lines 58-64; Yamada].

Combination of AAPA, Taguchi, and Yamada discloses all of the above elements, including a high frequency generator and a filter to attenuate high frequency component and a switching section. Combination does not specifically discloses well known velocity tracking and generation of current based on the velocity to the extent claimed.

However, it is well known in the art that it is advantageous to combine fine and course actuator so as reduce the components and save money on layout and parts. Also Ito clearly discloses:

a high frequency component being extracted from the velocity signal in an optical disc environment [col. 7, line 52 to col. 8, line 13];

Both the above combination of AAPA, Taguchi and Yamada discloses a laser control circuit and a high frequency generation and control circuits and all associated details.

One of ordinary skill in the art at the time of invention would have realized that cost of components and layout of extra components increase cost of system and many degradation takes place in the system due to components such as variation in temperature. And it would advantageous to remove these unwanted signals and provide highly stable tracking performance.

Therefore, it would have been obvious to have used a signal based on the velocity and feed it to the high-pass filter in the system of the above combination as taught by Ito because one would be motivated to reduce cost of system by combining several components and its operation together thus reducing cost of the system and also improve tracking performance of the system during degradation that is caused by temperature etc. [col. 5, lines 58-61, Ito].

5. As to claim 2, Taguchi discloses:

the current driving section has a frequency characteristic for enhancing the high frequency component, and the current driving section enhances the high frequency component included in the high frequency current generated by the high frequency current generation section at the time of reproduction and enhances the high frequency component included in the recording current generated by the recording current generation section at the time of recording [col. 2, lines 7-24 and col. 9, lines 17-24].

6. As to claim 3, Yamada discloses:

switching section includes a switch connected to the filter and a timing control section [signal WD, pulse train] for controlling the timing of opening or closing of the switch [col. 2, lines 7-24 and col. 9, lines 17-24].

7. As to claim 4, Taguchi discloses:

the at least one of the plurality of multi-pulses [fig. 13, pulse 134] includes a leading multi-pulse [fig. 13, pulse 135] [page 2, specification].

8. As to claim 5, AAPA discloses:

the pulse [fig. 13, 133] includes a specific pulse [fig. 13, 135 and 137] having a specific pattern [page 2, specification]; as to rest of the claim Yamada discloses:

the switching section causes the filter to operate so that the enhanced high frequency component included in the recording current is superposed on the specific pulse [col. 4, lines 42-64].

9. As to claim 6, AAPA discloses:

the recording mark includes a 3T mark recorded by 8-16 modulation [inherently present],

the specific pulse includes a 3T pulse corresponding to the 3T mark [fig. 20] [page 15; specification]. As to rest of the claim Taguchi discloses:

the switching section causes the filter to operate so that the enhanced high frequency component included in the recording current is superposed on the 3T pulse [col. 2, lines 7-24 and col. 9, lines 17-24].
NOTE: Since Taguchi covers all the pulses 3T pulse is also covered.

10. As to claim 7, Taguchi discloses:

the switching section causes the filter to operate so that the enhanced high frequency component included in the recording current is superposed on a portion
of at least one of the plurality of multi-pulses included in the pulse [col. 2, lines 7-24 and col. 9, lines 17-24].
NOTE: Since Taguchi covers all the pulses one pulse is also covered.

11. As to claim 8, Taguchi discloses:

switching section causes the filter to operates so that the enhanced high frequency component included in the recording current is superposed on an entirety of at least one of the plurality of multi-pulses included in the pulse [col. 2, lines 7-24 and col. 9, lines 17-24].
NOTE: Since Taguchi covers all the pulses at least one of the plurality of multi-pulse is also covered.

12. As to claim 10, Taguchi discloses:

the switching section causes the filter to operate so that the enhanced high frequency component included in the recording current in superposed on all of the plurality of multi-pulses included in the pulse [col. 2, lines 7-24 and col. 9, lines 17-24].
NOTE: Since Taguchi covers all the pulses at least one of the plurality of multi-pulse is also covered.

13. As to claim 11, AAPA discloses:

the reproduction current is a DC current [see fig. 13 and page 2-3, specification]

14. As to claim 12, Taguchi discloses:

the switching section causes the filter to operate so that the enhanced high frequency component included in the high frequency current is superposed on the reproduction current at the time of reproduction, and causes the filter to operate so that the enhanced high frequency component included in the recording current is attenuated at the time of recording [col. 2, lines 7-24 and col. 9, lines 17-24].

15. As to claim 13, Taguchi discloses:

the high frequency -component has a frequency of 100 MHz or higher [col. 1, lines 47-63].

16. As to claim 14, Taguchi discloses:

the high frequency component has a frequency of 100 MHz [col. 1, lines 47-63].

Taguchi teaches that frequency is 100 MHz or higher. Taguchi does not teach that frequency is lower than 450 MHz. "Official Notice" is taken that both the concept and the advantages of providing frequency lower than 450 MHz in this kind of systems are well known and well documented in the art. It would have been obvious to include upper limit to the higher frequency of operation and thereby reducing unnecessary extra noise that could be associated with higher frequencies. These concepts are well known in the art and do not constitute a patentably distinct limitation, per se [M.P.E.P. 2144.03].

17. As to claim 15, AAPA discloses:

the high frequency component has a frequency of substantially 300 MHz [page 9, specification].

18. As to claim 16, Taguchi discloses:

the filter includes a high pass filter [HPF] [fig. 3, units 55, 56 and 90] [col. 5, lines 1-23].

19. As to claim 17, Taguchi discloses:

the high frequency component has a frequency which is higher than a cut-off frequency of the filter [col. 5, lines 1-23].

NOTE: Here the Applicants are merely stating how a HPF works.

20. Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over combination of AAPA, Taguchi, Yamada and Ito as applied to claim 1 above, and further in view of Iwasa et al., US. patent 5,327,411 (hereafter Iwasa).

As to claim 9, combination of AAPA et al. discloses all of the above elements including a multi-pulse waveform and a multi-pulse leading pulse, middle pulse and trailing pulse. Even though AAPA discloses a trailing pulse it is not clear if consist of multi-pulse or not. In other words where middle pulse stops and end pulse starts. The combination of AAPA et al. does not specifically disclose well known details of trailing pulse or that trailing pulse could consist of multiple pulses itself, to the extent claimed.

However Iwasa clearly discloses:

the at least one of the plurality of mufti-pulses includes a trailing multi-pulse [col. 9, lines 18-32; col. 12, lines 12-65; fig. 4 and especially fig. 17].

Both combination of AAPA and Taguchi, and Iwasa are interested in providing smooth signals and generating multi-pulse for forming regular marks without any tear-drop shape..

Therefore, it would have been obvious to provide the system of AAPA et al. with pulse forming circuit [fig. 3, unit 4] and associated details as taught by Iwasa. The application or use of the pulse forming circuit as taught by Iwasa would have been obvious, because the pulse forming circuit performs the same

function in the same way as the pulse forming circuit of AAPA et al. system, and is an equivalent element. One of ordinary skill in the art would have recognized that the pulse forming circuit of Iwasa was equivalent and an obvious alternative to pulse forming circuit of system of AAPA et al.

21. Applicant's arguments filed on 6-1-04 (Paper # 11) have been fully considered but they are not deemed to be persuasive for the following reasons.

22. In the REMARKS, the Applicant argues as follows:

A) That: "Taguchi teaches away from "a filter for operating so as to attenuate the high frequency .." [page 9, para.3; REMARKS].

FIRST : See new rejection above.

SECOND: Taguchi does disclose BOTH the low pass filter to reduce high frequency component and also high pass filter, as disclosed in detail above.

B) That: "Taguchi does not teach advise, or suggest a recording current as recited in claim 1." .." [page 10, para. 1; REMARKS].

FIRST : The whole invention of Taguchi is based on recording AND reproducing [see col. 1, lines 17-24].

SECOND: Taguchi also clearly discloses that his system does indeed record the information [col. 4, lines 21-27] lines 35-42].

THIRD: It is impossible to read something unless it is written before hand. Therefore writing is inherently present when something is being read.

FOURTH: Changing and controlling recoding current is useless you are recording. Reading does require changing currents.

C) That: "Ito fails to teach ... [page 10, para. 5; REMARKS].

See new rejection above. Ito is not used for switching section.

As to rest of the arguments they are moot in view of the new ground of rejection.

Allowable Subject Matter

23. Claims 20-21 and 23-25 are allowed over prior art of record..

Claims 20-21 and 23-25 are allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose an optical disc which includes the control block which includes a linear velocity detection section and the switching section "the switching section cause the filter to operate so as to superpose high frequency component included in the recording current on at least one of the plurality of multi-pulses included in the pulse based on the linear velocity of the disc". It is noted that the closest prior art, Taguchi shows a similar apparatus which provides all the components and filter. However Taguchi fails to disclose a signal based on velocity that modifies the filter.

Other prior art cited

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Katoh et al. (US. Patent 6,088,311) "Optical disc device".

Contact Information

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gautam R. Patel whose telephone number is (703) 308-7940. The examiner can normally be reached on Monday through Thursday from 7:30 to 6.

The appropriate fax number for the organization (Group 2650) where this application or proceeding is assigned is (703) 872-9314.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To can be reached on (703) 305-4827.

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703)

305-4700 or the group Customer Service section whose telephone number is (703) 306-0377.

Gautam R. Patel
Primary Examiner
Group Art Unit 2655

GAUTAM R. PATEL
PRIMARY EXAMINER

August 4, 2004